OSC- 173.04

INPUT TO 2nd COUNT. 11.074

750 / 10.687 = 70.17 ft/sec

27.15

11.091

769.8 K

6.94 ft/sec

769.800 + 118 = 769.892

O2

6,940

3 HR +10% −0

3 HR = 180 min

180 min = 10800 sec.

+ 10% = 1080

11880 sec

10800 + 540 = 11340

H C. L.

11880 − 11340 − 10800

11355

11340

.05

56700

~~11340~~

~~567~~

~~11907~~

3 HR = 180

180 MIN. = 10800 S.

+10% = 1080

11880 SEC

5% = 1080 / 2 = 540

CENTER = 10800 + 540 = 11340

11340 2.5% = 283.5

284.

11340
284
11056 -
11624 -

4.76
11.340 ± 5%

4.7
2.5
2.2

PIN 7 OUT S/B 11.074

750K + 28.7K = 11.091

750K + 26.1K = 11.053

USED 750K + 28.7K

POSITION #1 11353.2 SEC.

RANGE 11880 SEC. 3HR +10%

11340 SEC 3HR +5%

10800 SEC 3HR.

HI POT
INS. RES.

OUTPUT AT PIN 7 - AT 5.5

7.5 VDC 11.074 ± 2.5%

AT PIN 7.
INJECT POSITIVE PULSE OF 175 V AND
PW 50 MCS. AND 5.86 MS PERIOD.
AND CHECK 10 POSITIONS OF SWITCH

POSIT #1 3 sec
2 - 6 "
3 - ETC ETC.

1710 #2

CHECK START & RESET INPUTS AT
5 VDC FOR 1MA MAX.

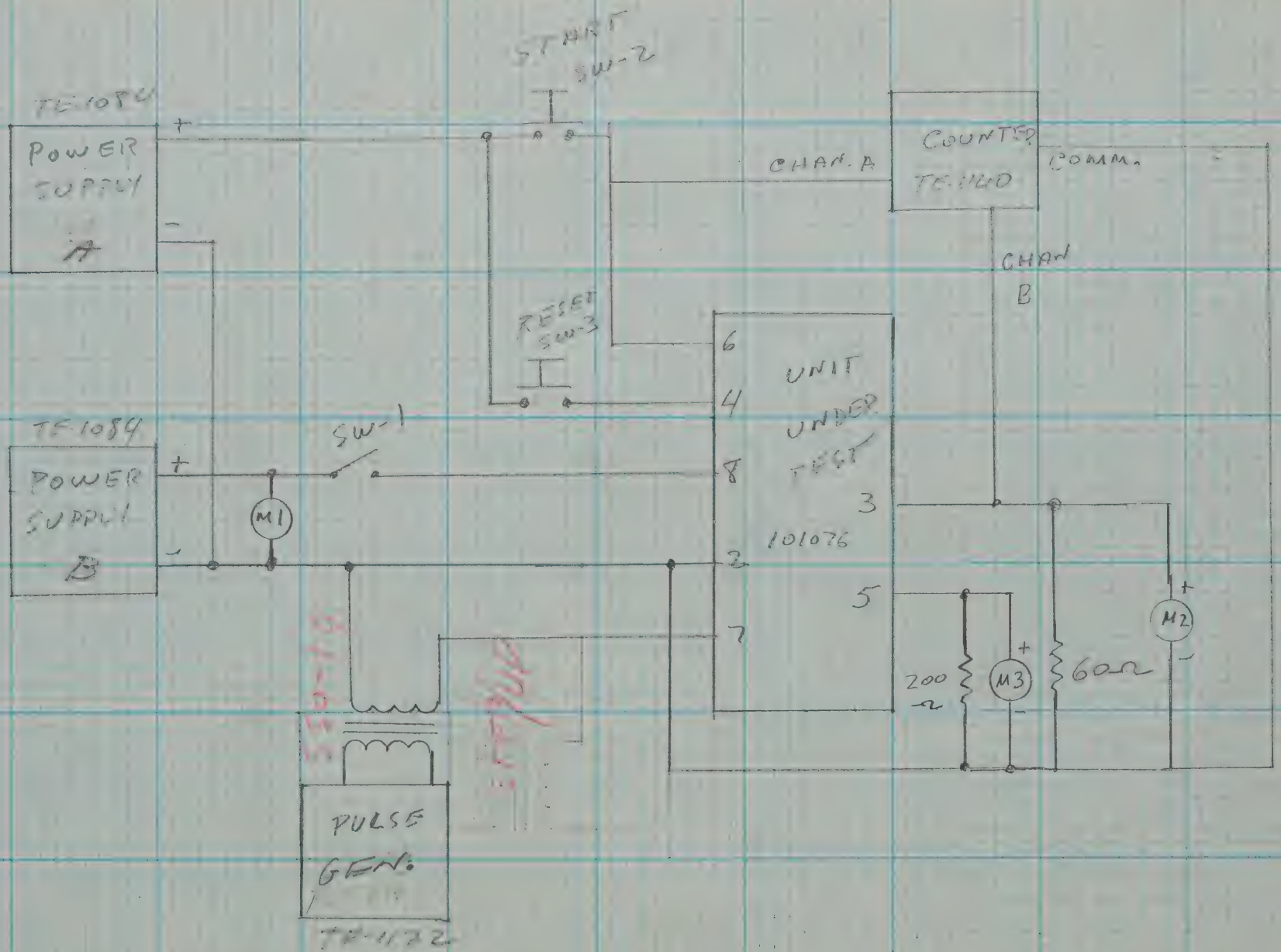
CHECK VOLTAGE DROP FROM PIN 3
TO PIN 3 WITH 100 MA AT 6.5 V
.5 VDC MAX

CHECK V. DROP FROM PIN 3 TO PIN 5
WITH 30 MAX AT 5.5 V - .5 VDC MAX

POWER CONSUMPTION
BEFORE 1MA MAX @ 7.5 V
AFTER TIME OUT 150MA MAX WITH
LOAD AT 7.5 V

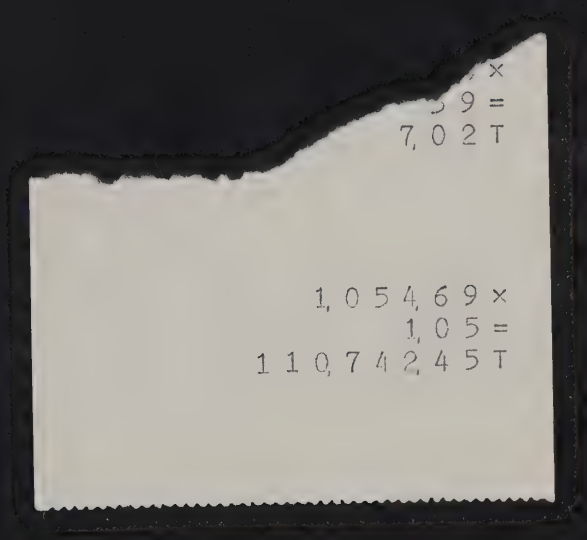
DISCONNECT INPUT FROM PIN 2

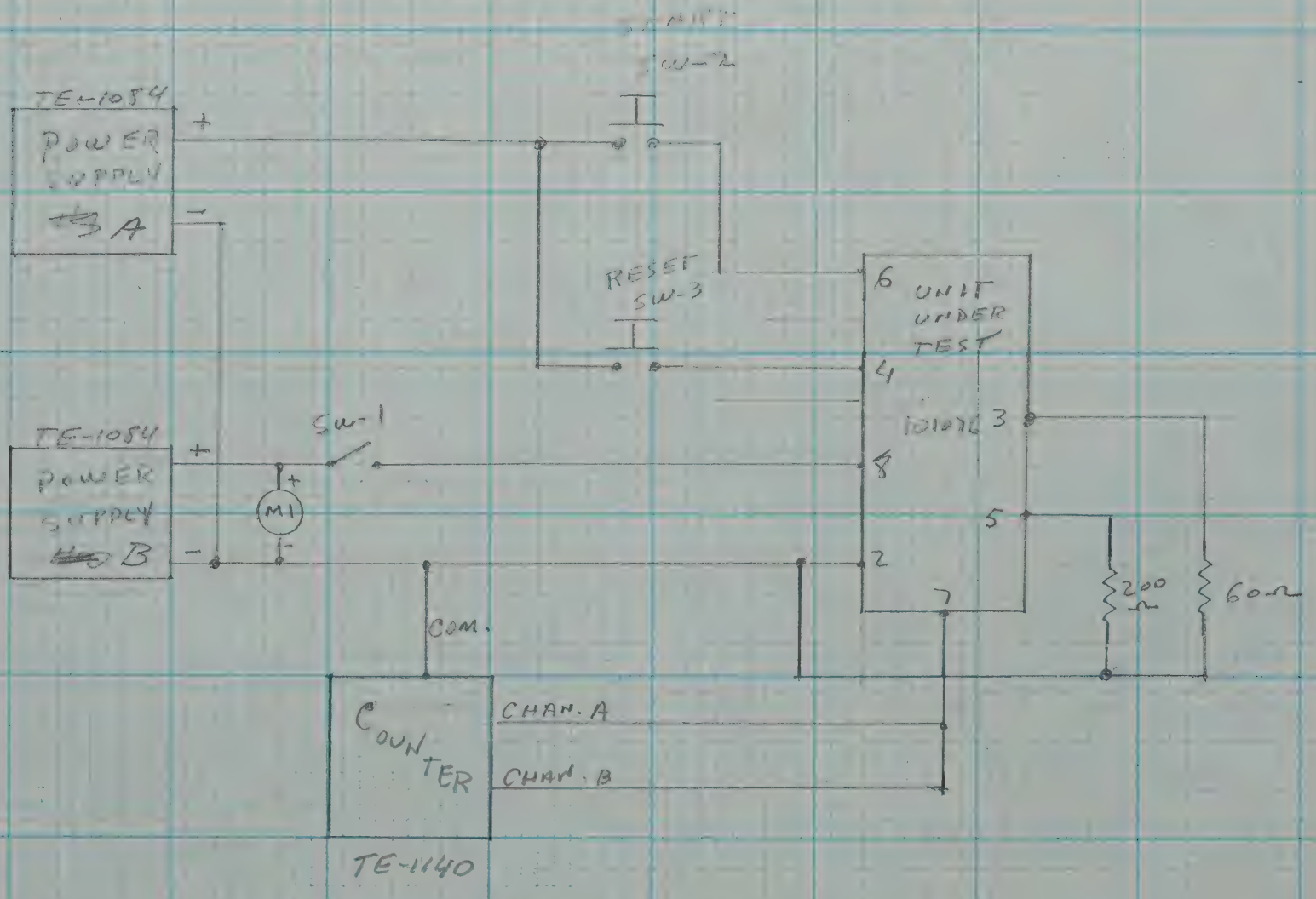
START TIMING IN SEQUENCE 3 AND
CHECK 3 HR ± 2.5% TIMING



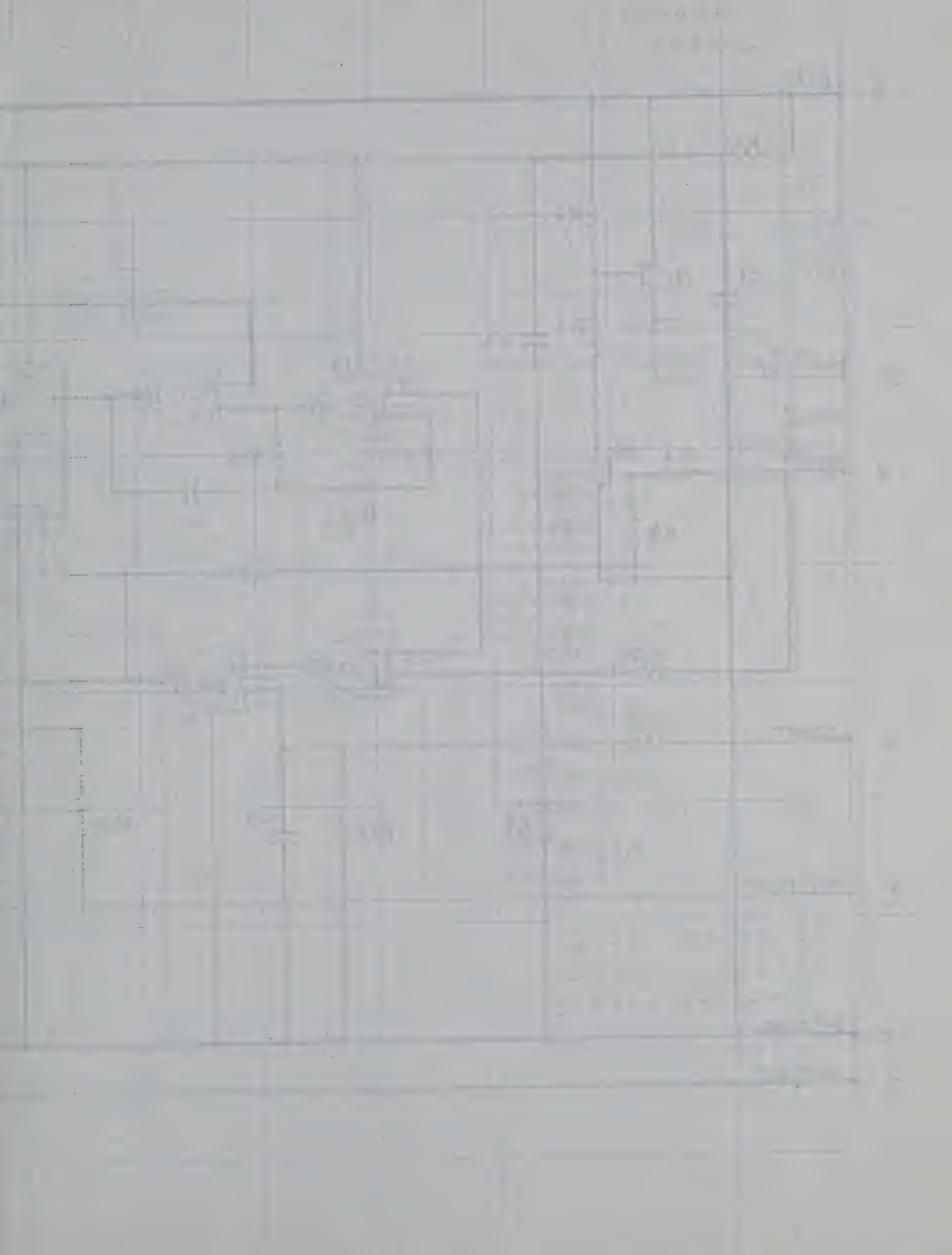
APPENDIX II

FIG #2


×
9 =
7,02T
1,05469×
1,05=
1107,4245T



APPENDIX II FIG. 1

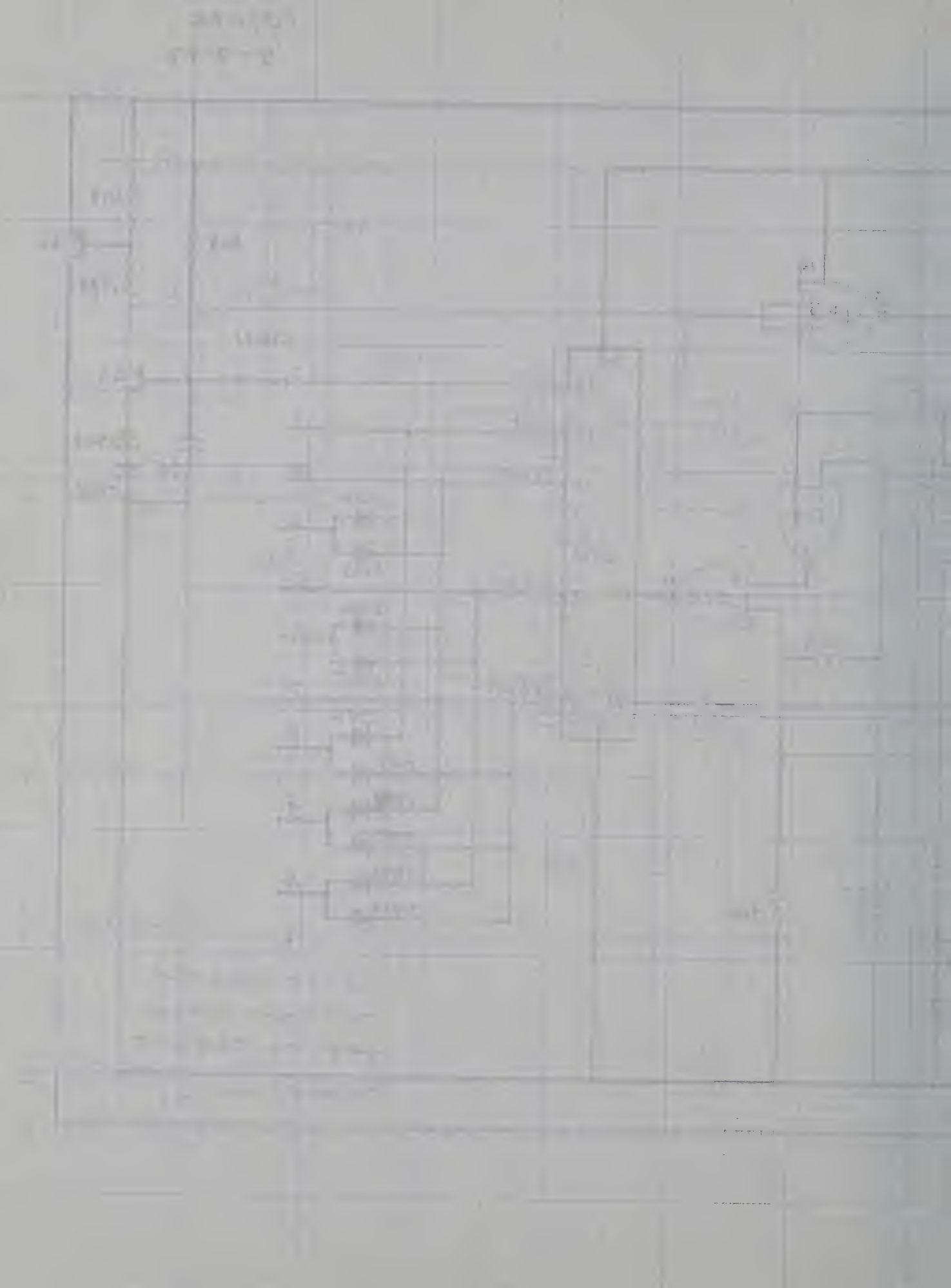


101076
9-8-72

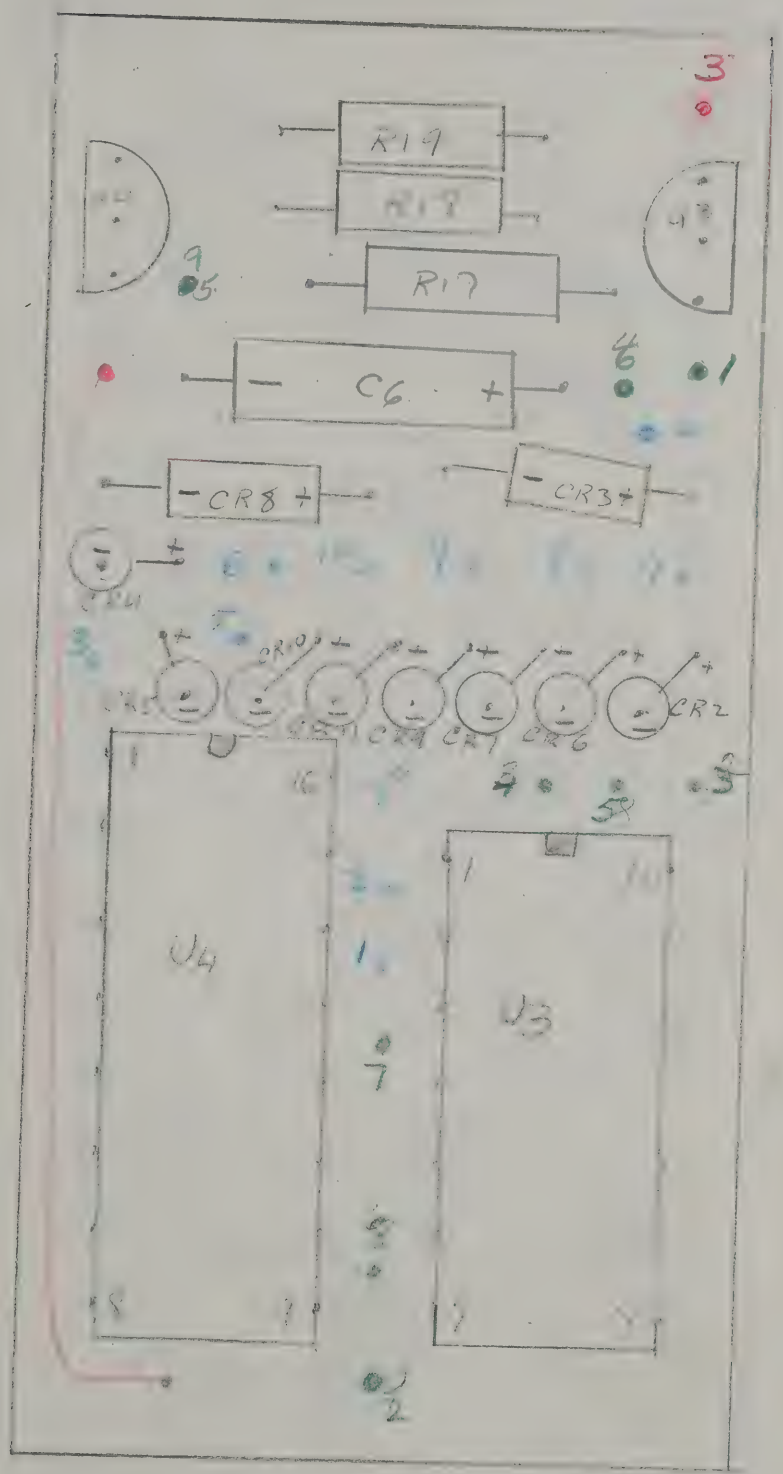
8 +VD
5 ZERO OUT
4 RESET
6 START
7 TEST POINT
2 DC COM.
3 OUTPUT

R1 R2 R3 R4 R5 R6 R7 R8 R9 R10 R11 R12 R13 R14 R15 R16 R17 R18 R19
C1 C2 C3 C4 C5 C6
Q1 Q2 Q3 Q4
IC1 IC2 IC3 IC4
CR1 CR2 CR3 CR4 CR5 CR6 CR7 CR8 CR9 CR10 CR11 CR12 CR13
SW-1
3HR 6HR 12HR 24HR 48HR

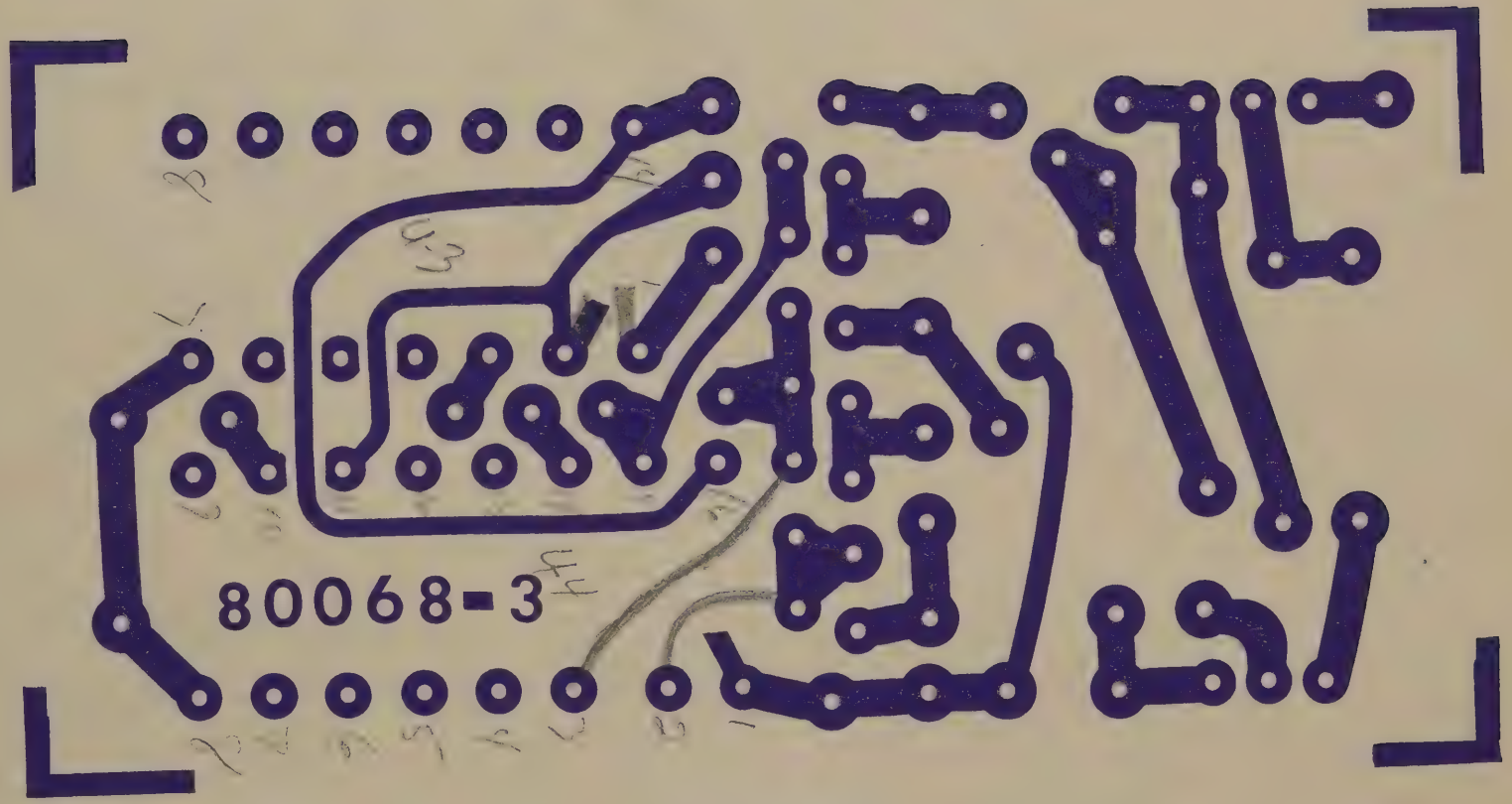
MUST CHANGE THIS PART OF CKT DUE TO IC4 NOT TURNING OFF Q3



101076



INTERCONNECTING HEADER


80068-3

Interconnecting Wires

1 = 1.7" [illegible]

2 = 1.2

3 = 1.1

4 = 1.350

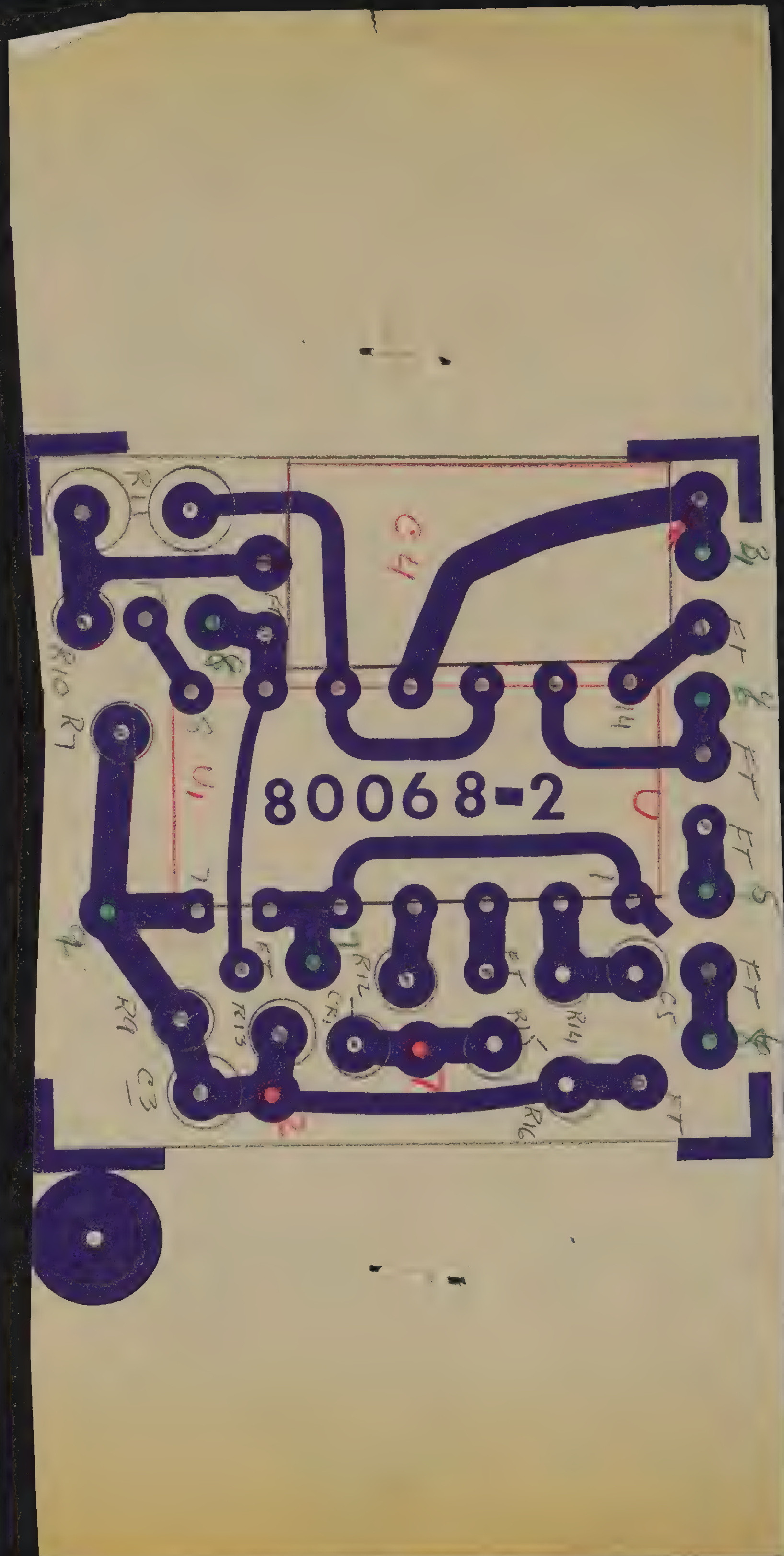
5 = 1.350

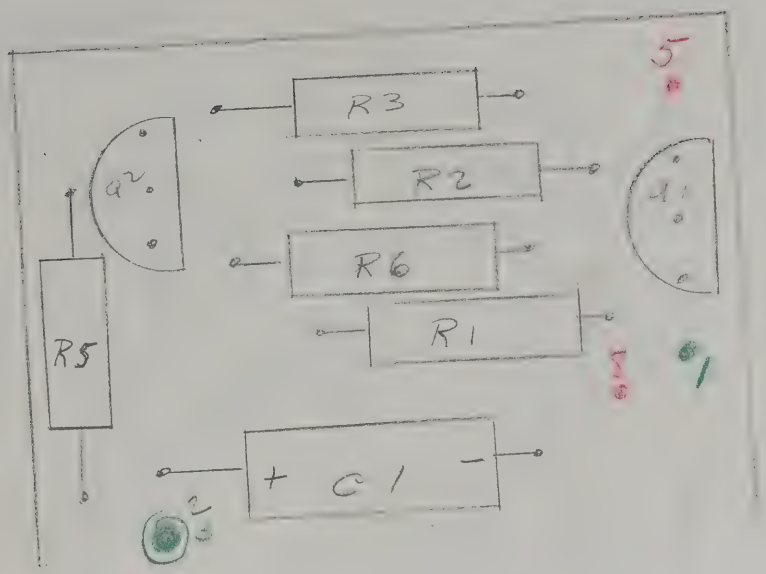
6 = 1.4

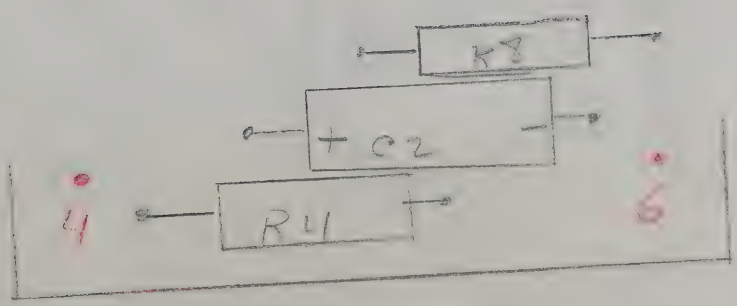
7 = .9

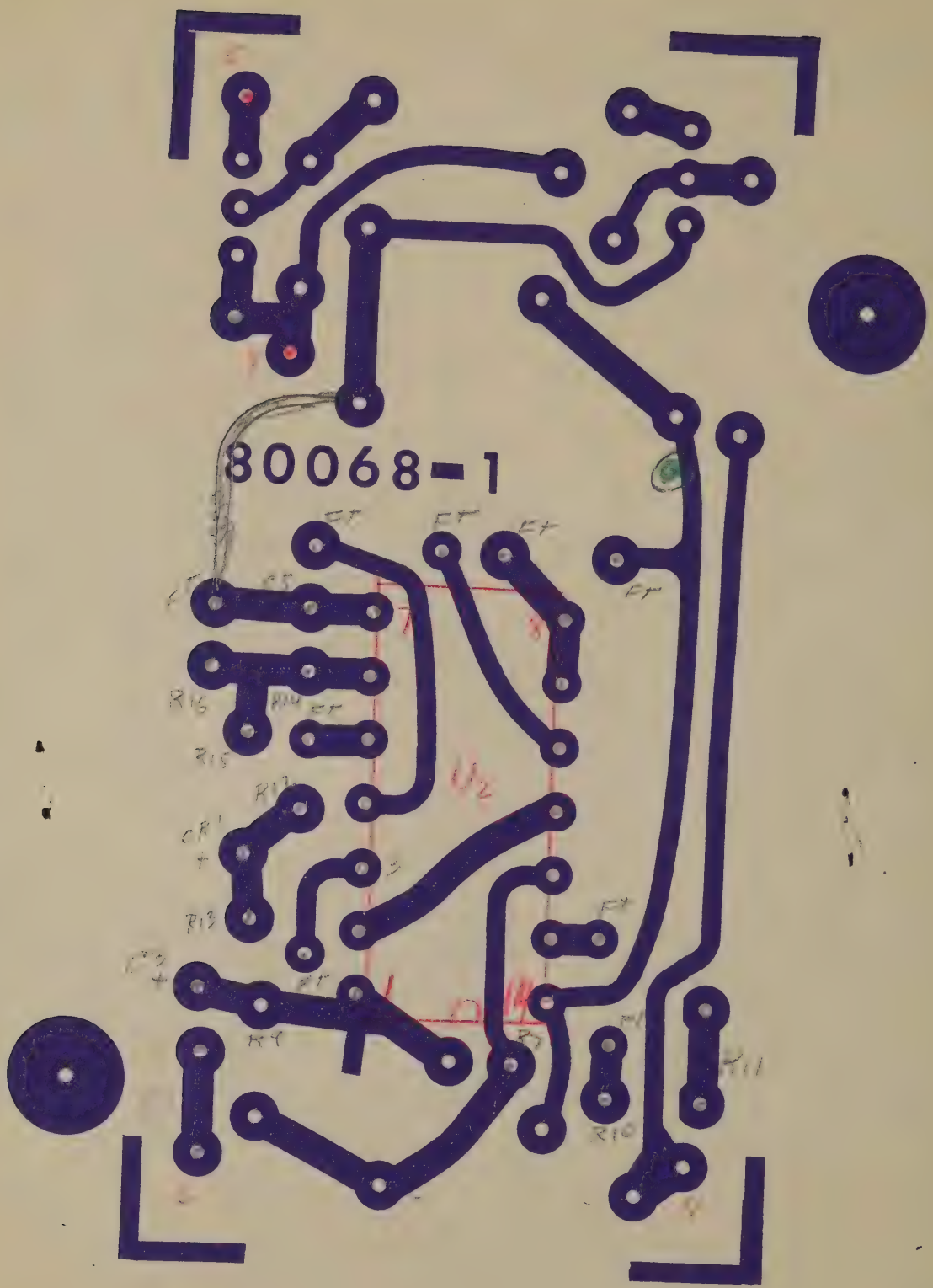
8 = 1.450

9 = .9


80068-2


R3
R2
R6
R1
R5
+ C1 -


R7
+ C2 -
R4


80068-1

	8	9	10	11	12	
0	0	0	0	0	0	
1	1	0	0	0	0	-3
2	0	1	0	0	0	-6
3	1	1	0	0	0	
4	0	0	1	0	0	-12
5	1	0	1	0	0	
6	0	1	1	0	0	-18
7	1	1	1	0	0	
8	0	0	0	1	0	-24
9	1	0	0	1	0	
10	0	1	0	1	0	
11	1	1	0	1	0	
12	0	0	1	1	0	-36
13	1	0	1	1	0	
14	0	1	1	1	0	
15	1	1	1	1	0	
16	0	0	0	0	1	-48
17	1	0	0	0	1	
18	0	1	0	0	1	-54
19	1	1	0	0	1	
20	0	0	1	0	1	-60
21	1	0	1	0	1	
22	0	1	1	0	1	
23	1	1	1	0	1	
24	0	0	0	1	1	-72
25	1	0	0	1	1	
26	0	1	0	1	1	
27	1	1	0	1	1	
28	0	0	1	1	1	
29	1	0	1	1	1	
30	0	1	1	1	1	
31	1	1	1	1	1	
32	0	0	0	0	0	

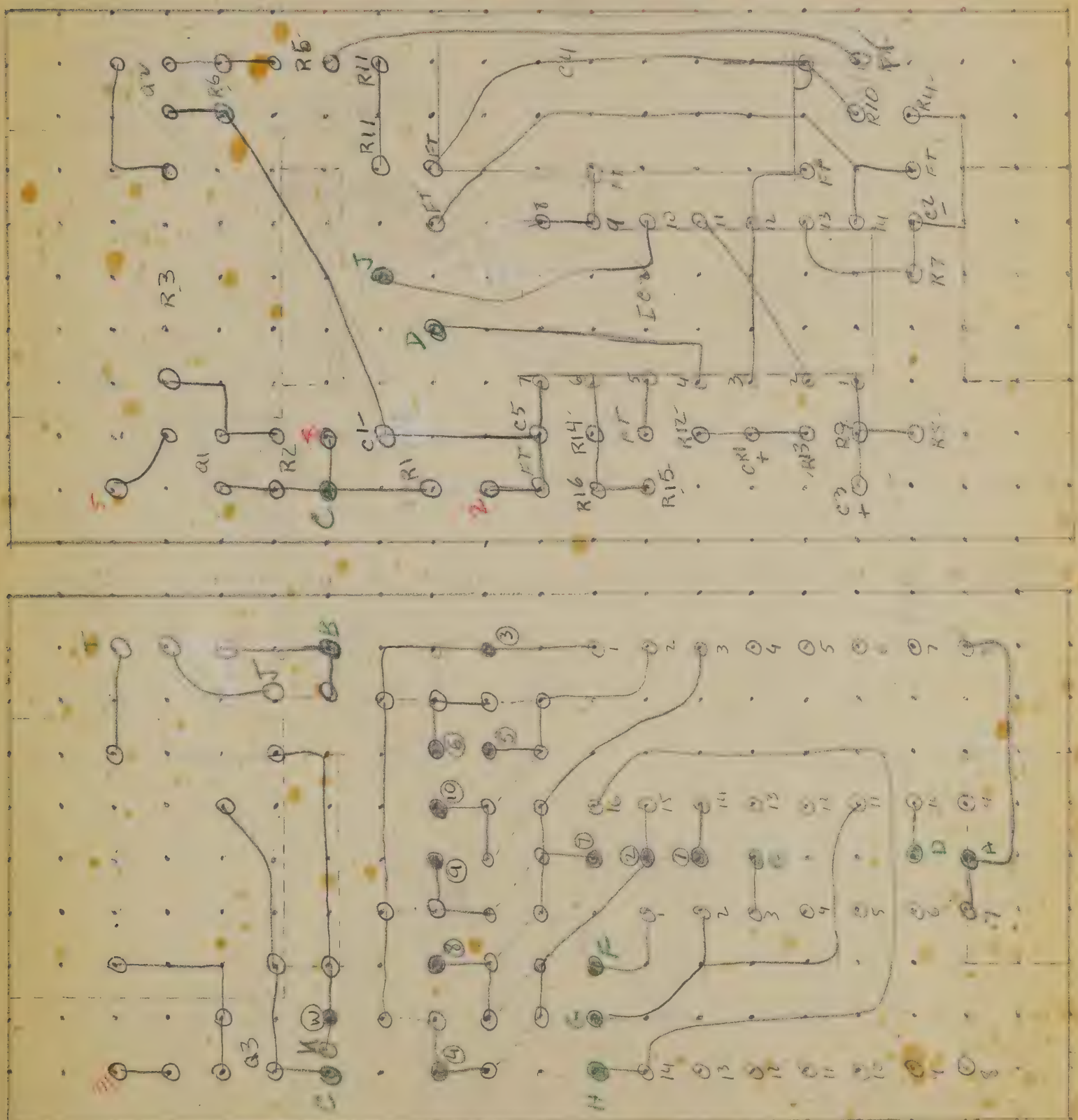
8 = 3
9 = 6
10 = 12
11 = 24
12 = 48

1 3 = 8 — 3
2 6 = 9 — 6
3 12 = 10 — 12
4 18 = 9, 10
5 24 = 11 — 24
6 36 = 10, 11
7 48 = 12 — 48
8 54 = 9, 12
9 60 = 10, 12
10 72 = 11, 12

BY ... DATE ... SUBJECT ... SHEET NO. ... OF ...

CHKD. BY ... DATE ... JOB NO. ...

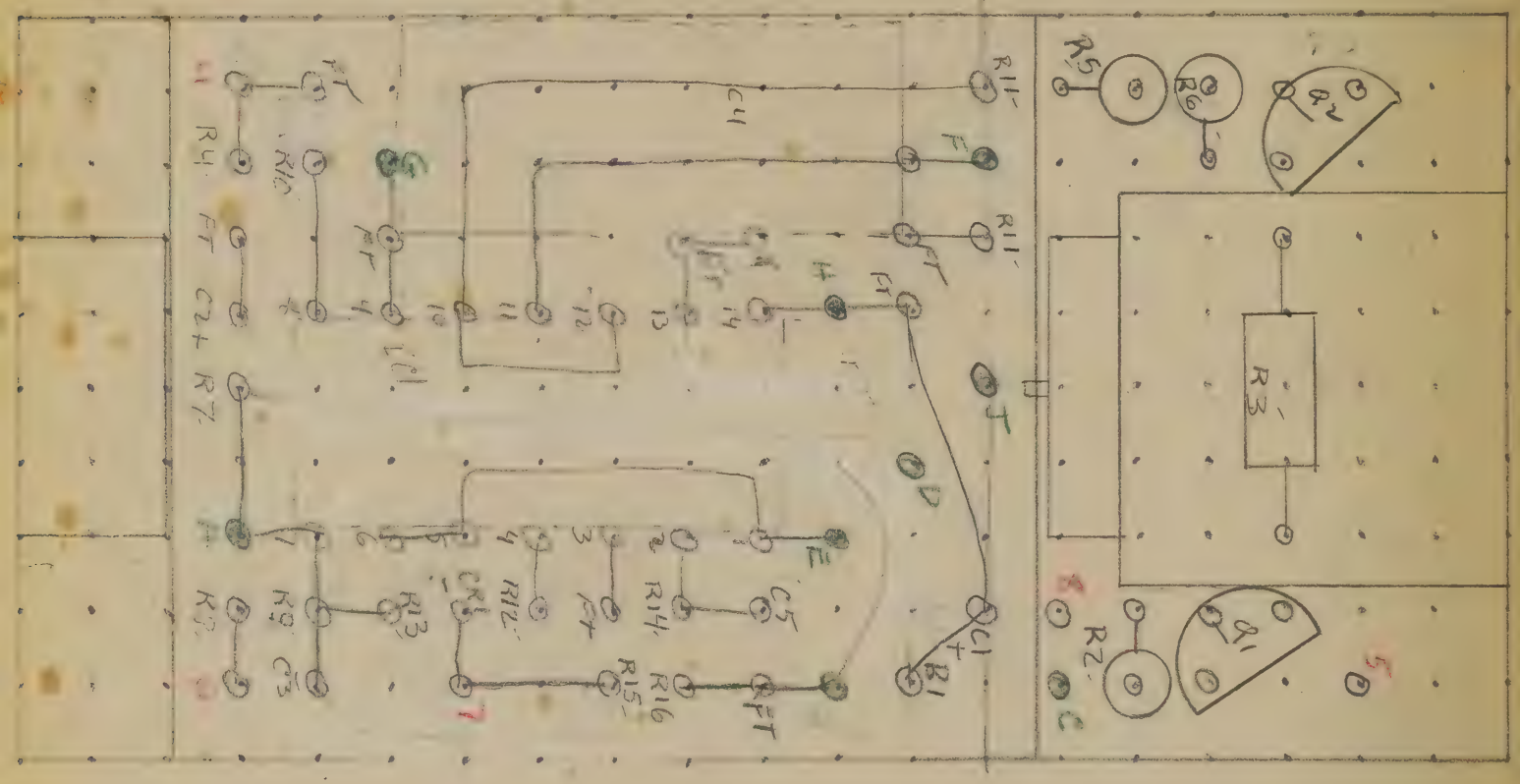
REDO GUIDANCE REF. DESIGN

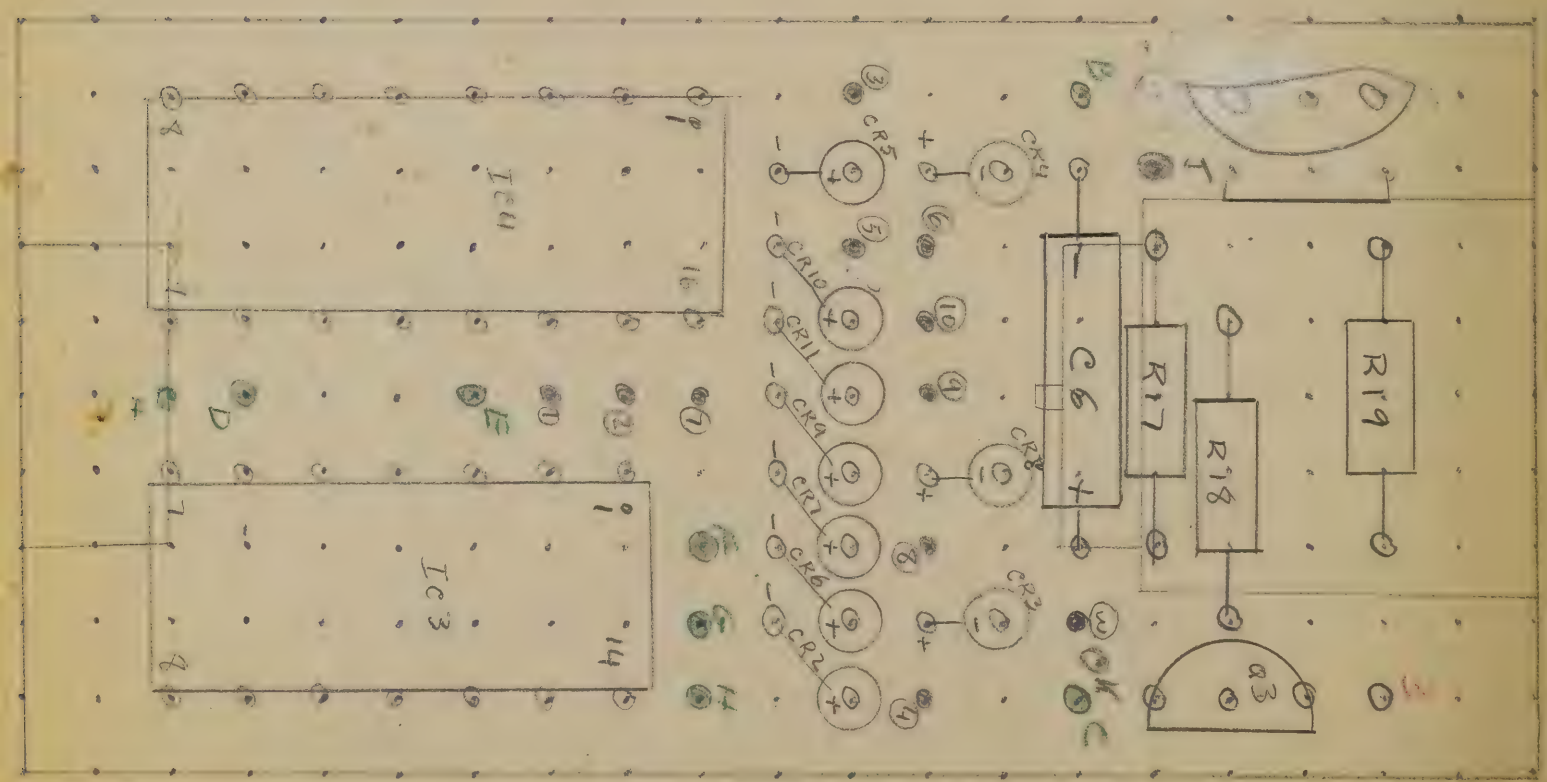


BY ..... DATE 9-13-72 SUBJECT 101076 SHEET NO. ..... OF .....

CHKD. BY ..... DATE ..... 72 HR TIMES JOB NO. .....

RLP 06 Changed 9-28-72 -00.



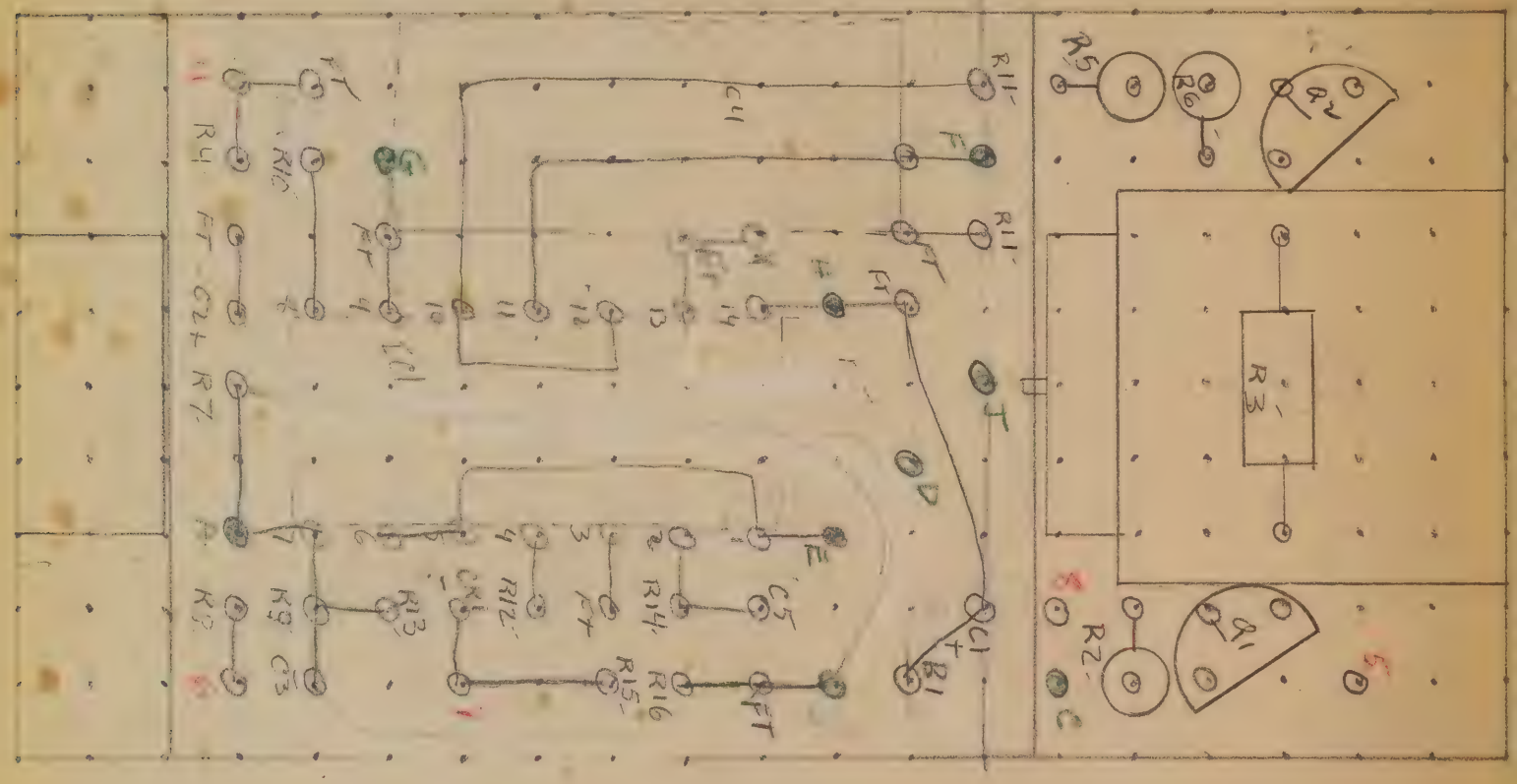


13-3 BOARDS

BY ..... DATE 9-13-72 SUBJECT 101076 SHEET NO. ..... OF .....

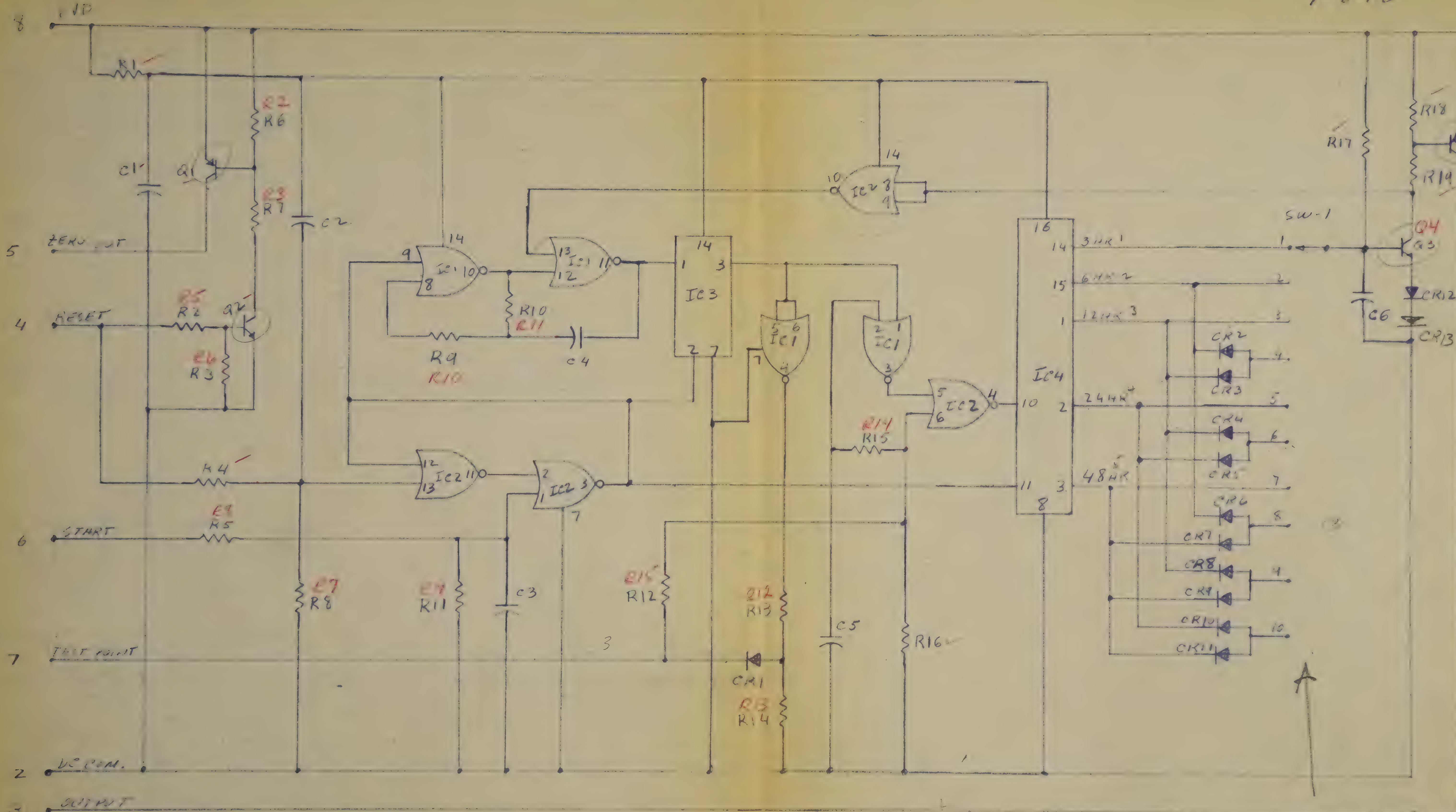
CHKD. BY ..... DATE ..... 72 HR TIMES JOB NO. 1

REV 01 CHANGED 9-28-72 -DA



13-3 BOARDS

101076
9-8-72



MUST CHANGE
THIS PART OR
CKT

All Capacitors ...
All Diodes ...

Des Changed 9-28-72

PARTS LIST 101076 1-8-72

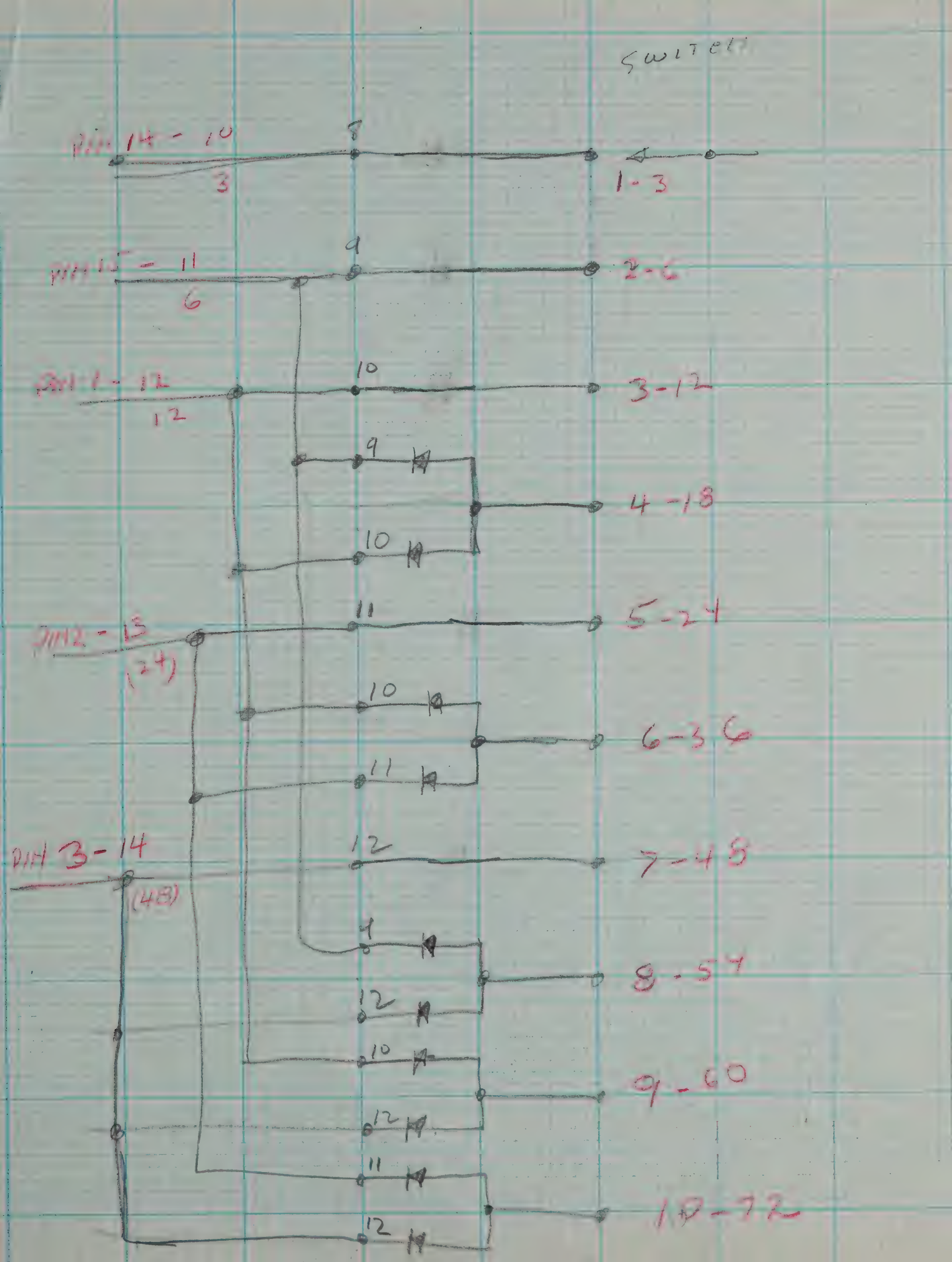
IC1 - CD 4001 AE
IC2 - CD 40014E
IC3 - CD 4024AE
IC4 - CD 4020AE
Q1 - MPS6534
Q2 - MPS3393
Q3 - MPS6534
Q4 - MPS3393
CR1 - 1N 4148
CR2 - 1N 4148
CR3 - 1N 4148
CR4 - 1N 4148
CR5 - 1N 4148
CR6 - 1N 4148
CR7 - 1N 4148
CR8 - 1N 4148
CR9 - 1N 4148
CR10 - 1N 4148
CR11 - 1N 4148
CR12 - 1N 4148
CR13 - 1N 4148
C1 - 4.7 UF/10V - CS13
C2 - 1UFD/35 - CS13
C3 - 1UFD/35 - CS13
C4 - .1UFD/100V - BV2B104K - IMB
C5 - .001/100 - CK12BX102K
C6 - 1UFD/35V - CS13

R1 - 100Ω - RC07
R2 - 3.3K RC07
R3 - 3.3K - RC07
R4 - 2.2K - RC07
R5 - 10K - RC07
R6 - 3.3K - RC07
R7 - 22K - RC07
R8 - 2.2K - RC07
R9 - 22K - RC07
R11 R10 - 1.5M - RC07
R11 - 2.2K RN60D RES.
TIMING - ≥750K
R12 - 47K - RC07
R13 - 22K - RC07
R14 - 10K - RC07
R15 - 100K - RC07
R16 - 4.7K - RC07
R17 - 18K - RC07
R18 - 1.5K - RC07
R19 - 560Ω - RC07

S1 - 51530-01-1-10N
GRAYHILL

890

891


SWITCH
PIN 14 - 10
3
8
1-3
9
2-6
10
3-12
4-8
11
5-24
6-36
12
7-48
8-56
9-60
10-72

$$\frac{22148}{3600} = 6.152$$

Room

6 - 12 - 18

.600 - .867 - 1.171

+55°C

.672 - .960 - 1.291

+75°C

.703 - 1.01 - 1.331

-5°C

.565 - .825 - 1.104

$10.2 \frac{kg}{2}$

21.0938 kg/cycle

HALF TO $\frac{1}{2}$ 14.

$= 1.0[illegible] \times 10^{-3}\ M^3$

3.6×10^{-3}

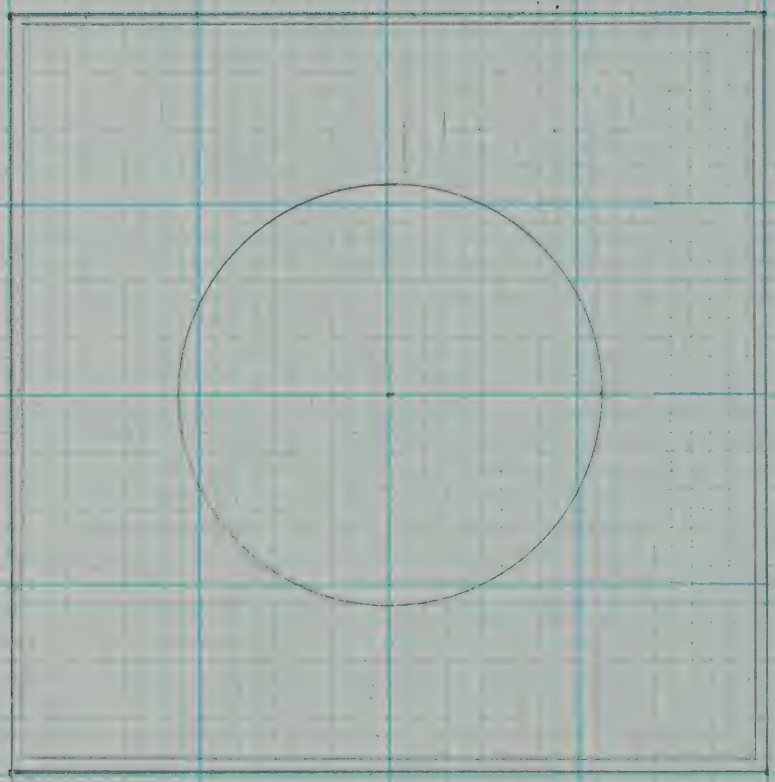
5.2593 MS

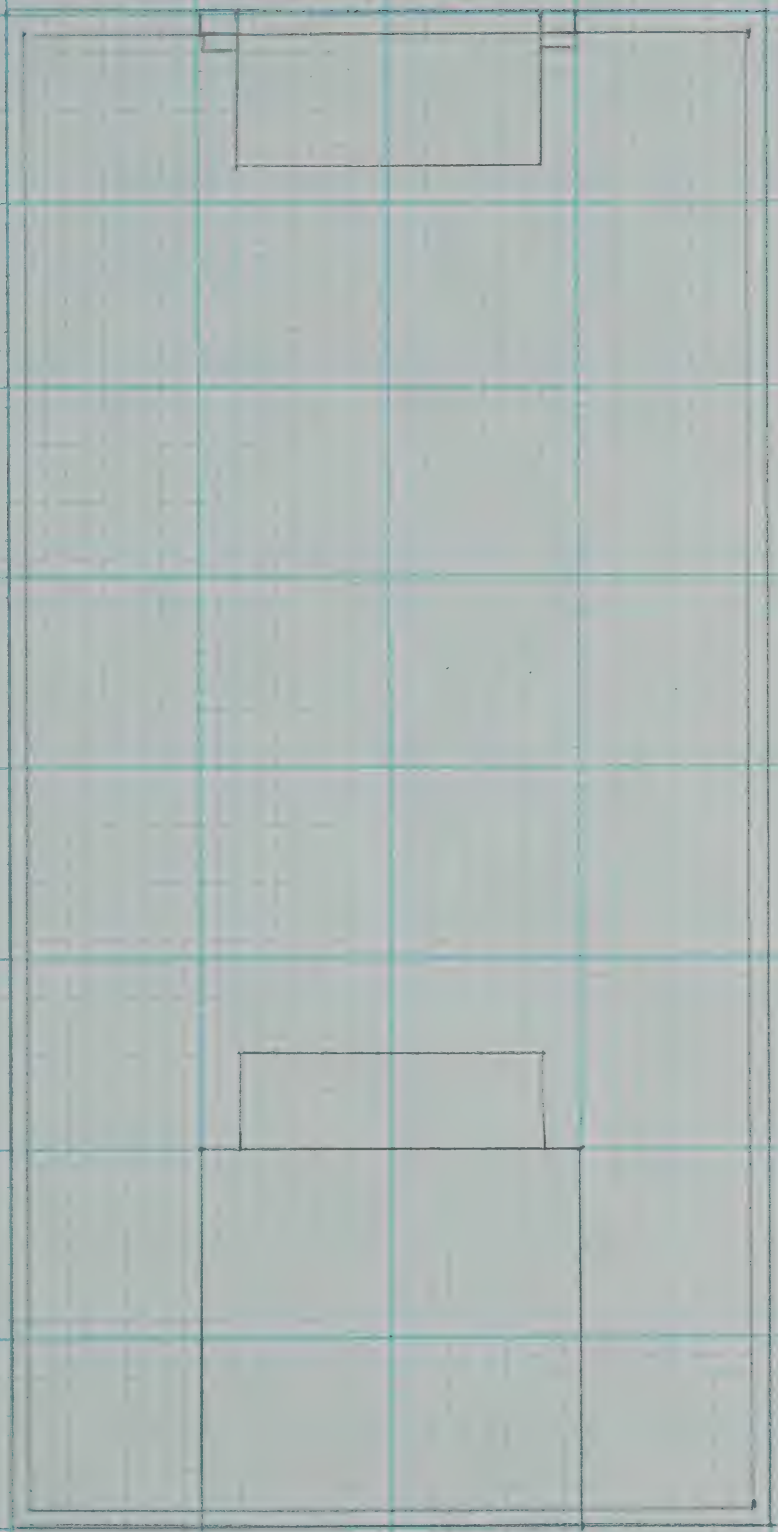
TES

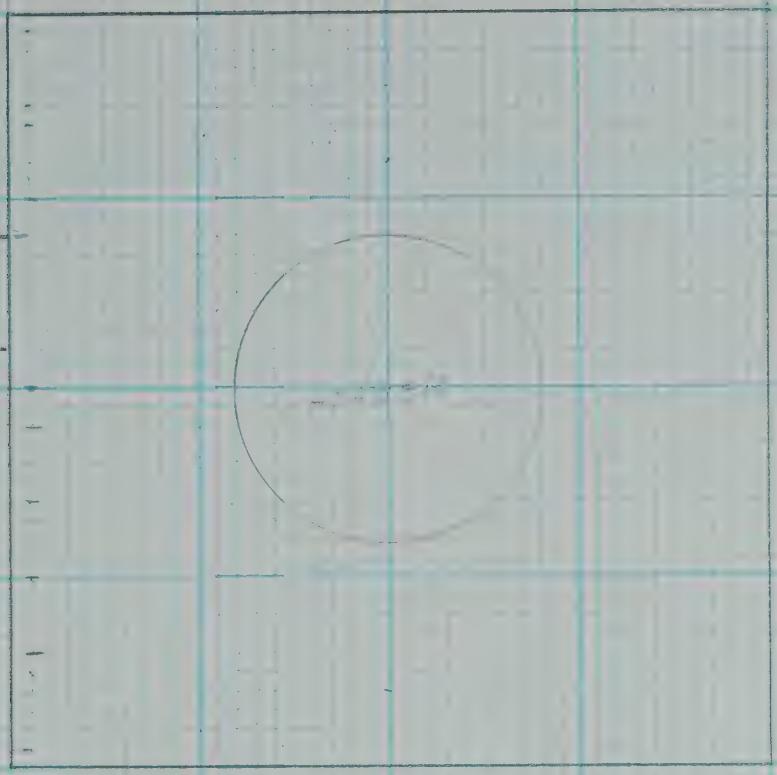
170.66 H=

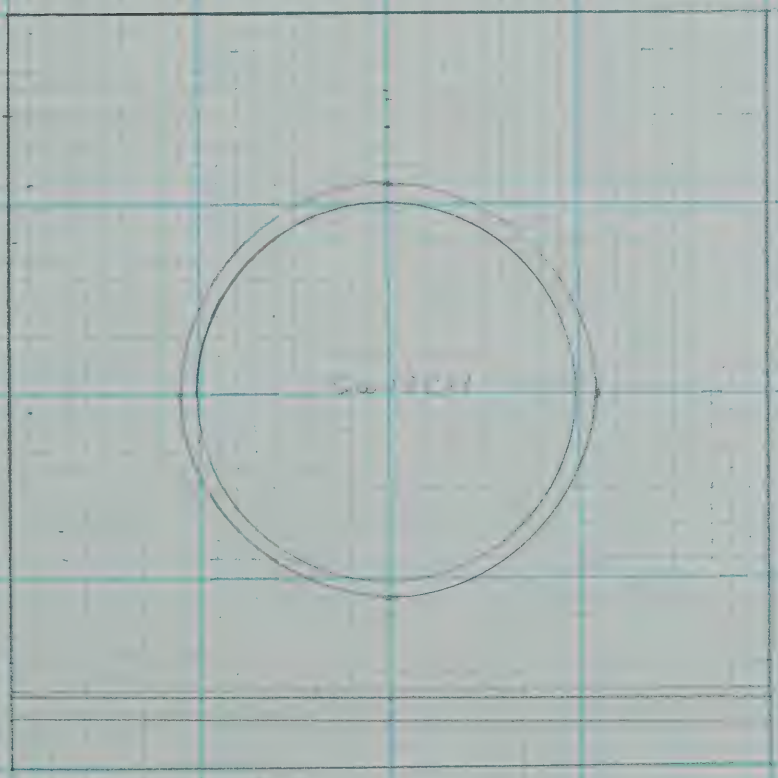
	6V	12V
1 –	.491	.621
2 –	.429	.491
3 –	.466	.569
4 –	.710	.835
5 –	.534	.724
6 –	.759	.939
7 –	.600	.862
8 –	.741	.885
9 –	.769	.952
10 –	.822	1.081


.5
SWITCH
.125
DIMS



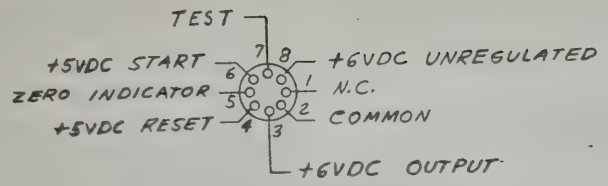


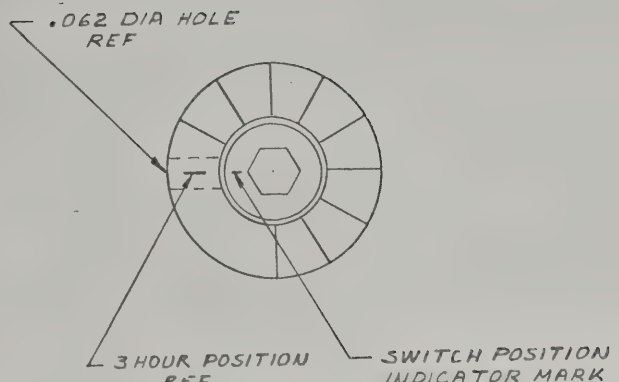




(FIN:) (CRES)

ALTERNATE KEY LOCATION WHEN HEADER NOT KEYED





DETAIL A
SCALE: NONE

OP
OUTSIDE PRODUCTION

PREPARED IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-1000

SOURCE CONTROL DRAWING

CLASSIFICATION OF CHARACTERISTICS (WR-43A)
CRITICAL — NONE
MAJOR — 1

2819712	DL 2821033
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES: FRACTIONS ± —
ANGLES ± —
3 PLACE DECIMALS ± .010
2 PLACE DECIMALS ± .03
DO NOT SCALE THIS DRAWING
MATERIAL:

NORTHROP - VENTURA DIV.
Newbury Park, California 91320
CONTRACT NO. N00017-72-C-1411
DESIGN Chris Leid
CHECK M. Zeller 8-10-72
Q.A. A. Martin 8-10-72
PROJECT Sidewinder PROGRAM
APPROVED FOR NOSC

DEPARTMENT OF THE NAVY
NAVAL ORDNANCE SYSTEMS COMMAND
WASHINGTON, D. C. 20360

TITLE
RELAY, TIME DELAY, ELECTRONIC

SIZE	CODE IDENT NO.	NAVORD DWG. NO.
E	10001	28 19654

SCALE NONE SHEET

Sidewinder 8-10-72

FORM 1 NOS 30-609 REV. 3-72

NOTES: UNLESS OTHERWISE SPECIFIED

1. GENERAL REQUIREMENTS:
   A. TIMER SHALL MEET THE GENERAL REQUIREMENTS OF MIL-STD-242 AND MIL-STD-454 WITH RESPECT TO USE OF MIL STANDARD PARTS AND WORKMANSHIP.

2. ELECTRICAL REQUIREMENTS: (M101)
   A. NOMINAL OPERATING VOLTAGE: $6^{+1.5}_{-0.5}$ VDC.
   B. TIME DELAY SELECTION:
      3 TO 72 HOURS PLUS 10 PERCENT AND MINUS 0 PERCENT IN 10 DISCRETE STEPS AS FOLLOWS: 3, 6, 12, 18, 24, 36, 48, 54, 60 AND 72 HOURS. INTERVALS TO BE SELECTABLE USING AN ALLEN HEAD TYPE WRENCH. THE ADJUSTMENT SHALL HAVE A POINTER TO INDICATE THE INTERVAL SELECTED. EACH OF THE 10 STEPS SHALL HAVE AN INDENTED TYPE STOP TO POSITIVELY SECURE POSITIONING AT THE SELECTED TIME INTERVAL. THE ADJUSTMENT SHALL START AT 3 HOURS AND END AT 72 HOURS AND NOT ALLOW A COMPLETE 360° ROTATION OF THE ADJUSTMENT. CLOCKWISE ROTATION OF ADJUSTMENT SHALL INCREASE TIMED OUTPUT.
   C. RESET OF THE TIMER TO ZERO SHALL BE ACCOMPLISHED BY APPLYING +5.0 ± 0.5 VDC AT 1.0 ma MAX. CURRENT TO PIN 4 OF THE CONNECTOR.
   D. ZERO INDICATOR OUTPUT SHALL BE EQUAL TO THE POWER SUPPLY VOLTAGE PLUS ZERO MINUS 0.5 VDC. IT SHALL BE CAPABLE OF SUPPLYING 30 ma MAX. CURRENT AND BE PRESENT ONLY WHEN THE RESET SIGNAL IS PRESENT.
   E. THE OUTPUT SIGNAL AT CONNECTOR PIN 3 SHALL BE $0.0^{+0.5}_{-0.0}$ BEFORE THE PRESENT TIMED INTERVAL AND EQUAL TO THE POWER SUPPLY VOLTAGE PLUS ZERO MINUS 0.5 VDC AFTER THE TIMED INTERVAL. IT SHALL BE CAPABLE OF 0.10 AMPERES CONTINUOUS.
   F. THE TIMED INTERVAL SHALL BEGIN WITH THE APPLICATION OF A +5 ± 0.5VDC SIGNAL AT 1.0 ma MAX. FOR A MINIMUM OF 5 MILLISECONDS TO CONNECTOR PIN 6.
   G. POWER FOR THE TIMER SHALL BE PROVIDED THROUGH THE CONNECTOR. PIN 8 WILL BE THE POSITIVE TERMINAL AND PIN 2 THE NEGATIVE TERMINAL. THE NEGATIVE TERMINAL SHALL HAVE A COMMON D.C. REFERENCE TO THE TIMED OUTPUT, ZERO INDICATOR, START, AND RESET SIGNALS.
   H. THE CURRENT DRAIN OF THE TIMER SHALL NOT EXCEED 1.0 ma. DURING THE TIME IT IS SET TO ZERO OR DURING THE TIMING INTERVAL AND NOT EXCEED 50 ma PLUS LOAD CURRENT WHEN TIMED OUT.
   I. THE TIMER OPERATION SHALL NOT BE DEGRADED BY TRANSEINTS OF 0.5V AND 10×10^{-3} SEC. DURATION ON THE POWER SUPPLY CONNECTIONS.
   J. HEADER PIN 7 TO BE USED AS A TEST POINT TO ALLOW ACCELERATED CHECK OF UNIT BY INSERTING AN EXTERNAL SIGNAL

3. MECHANICAL AND PHYSICAL REQUIREMENTS:
   A. THE TIMER SHALL WEIGH LESS THAN FOUR (4) OUNCES.
   B. THE TIMER SHALL BE ENVIRONMENTALLY SEALED.
   C. SOLDER HOOK TERMINALS SHALL BE PROVIDED FOR ELECTRICAL INTERFACE CONNECTIONS TO THE TIMER.

4. ENVIRONMENTAL REQUIREMENTS:
   A. NON OPERATING TEMPERATURE: − 65°F TO + 150° F.
   B. OPERATING TEMPERATURE: + 20°F TO + 130° F.
   C. SHOCK: 60 g − 10 ms.
   D. VIBRATION: 5.5 Hz TO 500 Hz AT 1.5 g PEAK.
   E. HUMIDITY: 10 TO 95 % RELATIVE HUMIDITY.

5. TEST REQUIREMENTS:
   A. AN END ITEM TEST PROCEDURE SHALL BE PREPARED AND SUBMITTED TO BUYER AT LEAST 30 DAYS PRIOR TO DELIVERY OF FIRST ARTICLE. THIS TEST PROCEDURE SHALL BE DESIGNED TO PROVE ELECTRICAL PERFORMANCE OF TIMER TO BE IN ACCORDANCE WITH THIS DOCUMENT.
   B. EACH END ITEM SHALL BE TESTED TO ABOVE TEST PROCEDURE BY VENDOR BEFORE DELIVERY. DATA FROM THESE TESTS SHALL ACCOMPANY EACH ARTICLE. BUYER MAY WITNESS THESE TESTS AT HIS OPTION.

6. ONLY THE ITEM DESCRIBED ON THIS DRAWING WHEN PROCURED FROM THE VENDOR(S) LISTED HERE IS APPROVED FOR USE IN THE APPLICATION(S) SPECIFIED HEREON. A SUBSTITUTE ITEM SHALL NOT BE USED WITHOUT PRIOR TESTING AND APPROVAL.

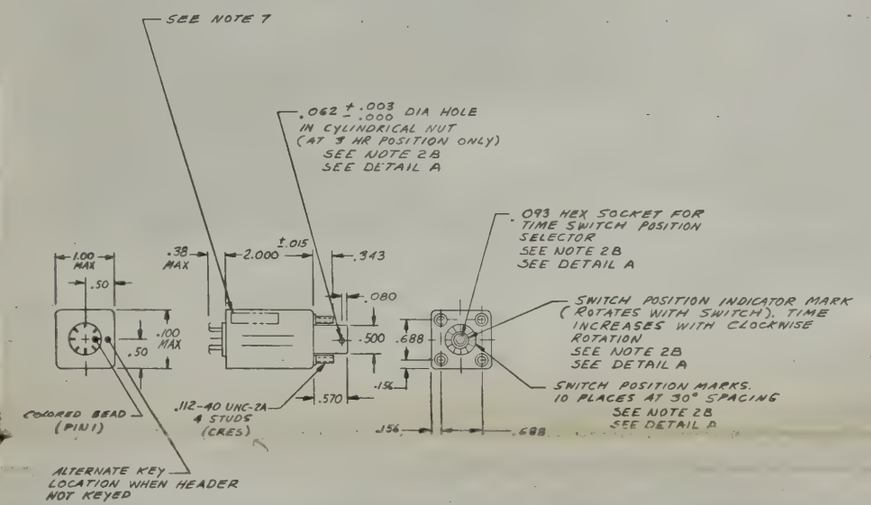
7. IDENTIFY BY RUBBER STAMPING 10001-2819654 IN .12 HIGH GOTHIC CHARACTERS USING INK TT-I-1795, TYPE I, BLACK. COVER WITH LACQUER TT-L-32, CLEAR. LOCATE APPROX AS SHOWN

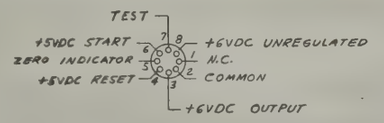
APPROVED SOURCE(S) OF SUPPLY

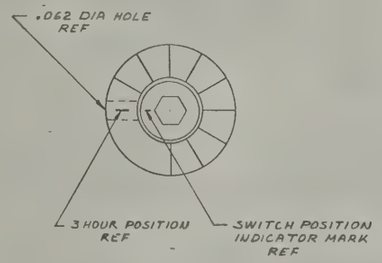
VENDOR	VENDOR'S ITEM IDENT NO.	APPLICATION
ELECTRO-MODULE, INC 2855 METROPOLITAN PLACE. POMONA, CALIF. 91767 CODE IDENT. 34217	10881	MK30 MOD 1
PARKO ELECTRONICS CO. INC. 1540 SOUTH LYON SANTA ANA, CA 92705 CODE IDENT 13979	101076	MK30 MOD1

REVISIONS

ZONE	LTR	DESCRIPTION	DATE	APPROVED
	A	REPLACES REV NC WITH ... SEE DWG CN RELEASED BY ADCN ...	8-7-72	
	B	SEE DWG CN RELEASED BY ADCN C-1	8-16-72	







DETAIL A
SCALE: NONE

OP
OUTSIDE PRODUCTION

PREPARED IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-1000

SOURCE CONTROL DRAWING

CLASSIFICATION OF CHARACTERISTICS (WR-43A)
CRITICAL — NONE
MAJOR — 1

NEXT ASSY APPLICATION	USED ON
2819712	DL 2821033

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES: FRACTIONS ± —
ANGLES ± —
3 PLACE DECIMALS ± .010
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PROJECT Anderson-PROGRAM
APPROVED FOR NOSC

DEPARTMENT OF THE NAVY
NAVAL ORDNANCE SYSTEMS COMMAND
WASHINGTON, D.C. 20360

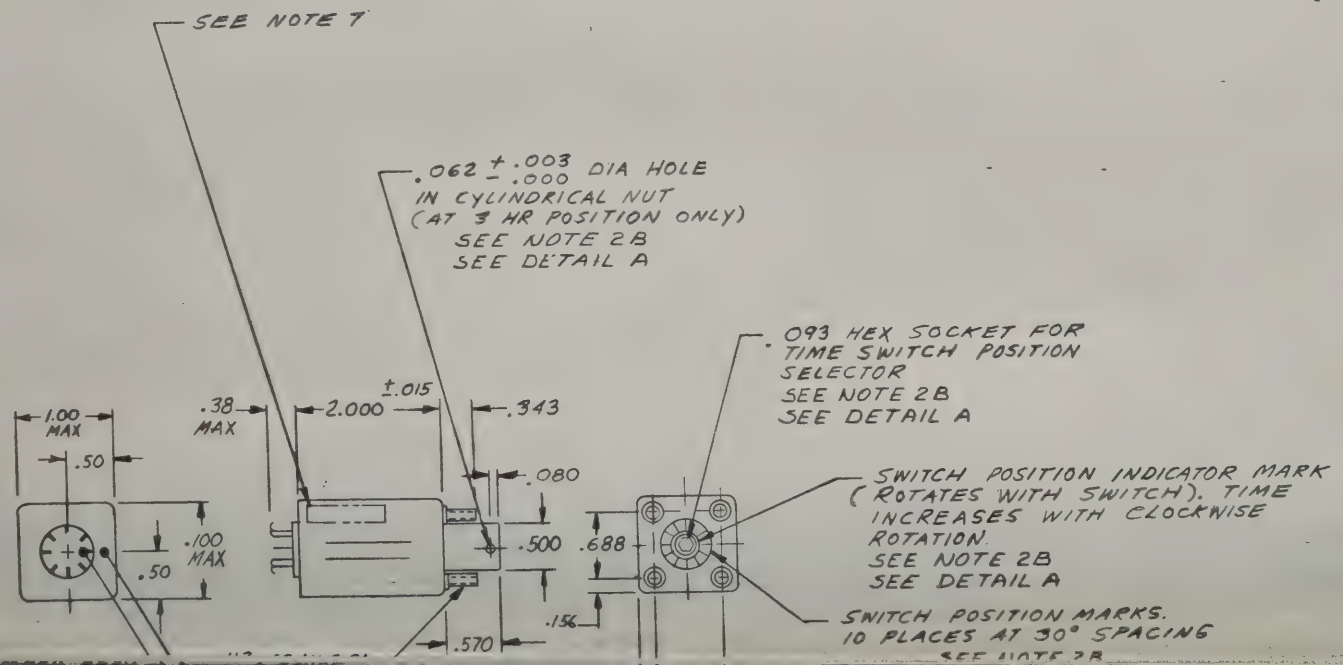
TITLE
RELAY, TIME DELAY, ELECTRONIC

SIZE	CODE IDENT NO.	NAVORD DWG. NO.
E	10001	2819654

SCALE NONE

Arnold 8-10-72

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED
	A	REPLACES REV NC [illegible] SEE DWG CN RELEASED [illegible] AD [illegible]	2-72	[illegible]
	B	SEE DWG CN RELEASED BY ADCN E-1	16-74	J.S.



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NOTICE OF REVISION (NOR)
(SEE MIL-STD-480 FOR INSTRUCTIONS)

This revision described below has been authorized for the document listed.

1. ORIGINATOR NAME AND ADDRESS	DATE	MFR. CODE	NOR. NO.
NORTHROP CORPORATION, VENTURA DIV. 1515 RANCHO CONEJO BOULEVARD NEWBURY PARK, CALIFORNIA 91320	1-28-75	77646	—

2. TITLE OF DOCUMENT	3. MFR. CODE	4. DOCUMENT NUMBER	
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	5. REVISION LETTER (CURRENT) A	(NEW) B	6. ECP NO. —

7. CONFIGURATION ITEM (OR SYSTEM) TO WHICH ECP APPLIES

ASW MOBILE TARGET MK-30 MOD I

8. DESCRIPTION OF REVISION

PRODUCTION RELEASE

V101 THRU V118 ok as is

9. THIS SECTION FOR GOVERNMENT USE ONLY

A. CHECK ONE

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10. ACTIVITY ACCOMPLISHING REVISION	REVISION COMPLETED (SIGNATURE)	DATE

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U.S. GOVERNMENT PRINTING OFFICE : 1969 O - 332-092

SYSTEM ROUTE	SIGNATURE	DATE
DRAFTSMAN	J. Schaffer	1-28-75
GROUP ENGR.	W.K. Quick	1-28-75
CHECKER	R Butler	1-28-75
STRESS		

SYSTEM ROUTE	SIGNATURE	DATE
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